We claim:

1. A method of reducing or preventing degeneration of retinal neurons in a mammal caused by exposure to light or other environmental trauma comprising administering to the mammal, prior to, during or following such exposure, a therapeutically effective dose of neurotrophic factor.

2. The method of claim 1 wherein said neurotrophic factor is brain derived neurotrophic factor, ciliary neurotrophic factor, neurotrophin-3 or a combination thereof.

3. The method of claim 2 wherein said retinal neurons are photoreceptors.

4. The method of claim 3 wherein said administration is intraocular.

5. The method of claim 4 wherein said administration is into the vitreous or into the subretinal (interphotoreceptor) space.

6. The method of claim 3 wherein said administration is systemic delivery.

7. The method of claim 6 wherein said neurotrophic factor has been modified in such a way as to increase its ability to be transported across the blood-retinal barrier.

8. The method of claim 7 wherein said modification comprises increasing the lipophilicity of the factor.

9. The method of claim 7 wherein said modification comprises glycosylation of the factor.

10. The method of claim 7 wherein said modification comprises increasing the net positive charge on said factor.

11. The method of claim 6 wherein said systemic delivery is by an oral route.

12. The method of claim 7 wherein said systemic delivery is by subcutaneous, intravenous or intramuscular injection.

13. A method of preventing or reducing degeneration of retinal neurons in a mammal caused by exposure to light or other environmental trauma comprising administering to the mammal, prior to, during or following said exposure, a therapeutically effective dose of one or more factors selected from the group consisting of acidic fibroblast growth factor (aFGF), bFGF plus heparin, aFGF plus heparin, interleukin-1 beta (IL-1β) and tumor necrosis factor-alpha (TNF-α).

14. The method of claim 13 wherein said retinal neurons are photoreceptors.

15. The method of claim 14 wherein said administration is intraocular.

16. The method of claim 15 wherein said administration is into the vitreous or into the subretinal (interphotoreceptor) space.

17. The method of claim 14 wherein said administration is delivered systemically.

18. The method of claim 17 wherein said systemic delivery is by an oral route.

19. The method of claim 18 wherein said systemic delivery is by subcutaneous, intravenous or intramuscular injection.

20. A method of reducing or preventing degeneration of retinal neurons in a mammal having a pathological condition wherein retinal degeneration occurs, comprising administering to said mammal a therapeutically effective dose of a neurotrophic factor.

21. The method of claim 20 wherein said pathological condition is retinal detachment, age-related or other maculopathies, photic retinopathies, surgery-induced retinopathies (either mechanically or light-induced), toxic retinopathies, diabetic retinopathies, retinopathy of prematurity, viral retinopathies such as CMV or HIV retinopathy related to AIDS; uveitis; ischemic retinopathies due to venous or arterial occlusion or other vascular disorder, retinopathies due to trauma or penetrating lesions of the eye, peripheral vitreoretinopathy or inherited retinal degenerations.

22. The method of claim 21 wherein said neurotrophic factor is brainderived neurotrophic factor, ciliary neurotrophic factor, neurotrophin-3 or a combination thereof.

23. The method of claim 22 wherein said retinal neurons are photoreceptors.

24. The method of claim 23 wherein said administration is intraocular.

25. The method of claim 24 wherein said administration is into the vitreous or into the subretinal (interphotoreceptor) space.

26. The method of claim 23 wherein said administration is by systemic delivery.

27. The method of claim 26 wherein said systemic delivery is by an oral route.

28. The method of claim 27 wherein said systemic delivery is by subcutaneous, intravenous or intramuscular injection.

29. A method of reducing or preventing degeneration of retinal neurons in a mammal having a pathological condition wherein retinal degeneration occurs, comprising administering to said mammal a therapeutically effective dose of one or more factors selected from the group consisting of acidic fibroblast growth factor (aFGF), bFGF plus heparin, aFGF plus heparin, IL-1β, TNF-α and IGF-2.

30. The method of claim 29 wherein said retinal neurons are photoreceptors.

31. The method of claim 30 wherein said administration is intraocular.

32. The method of claim 31 wherein said administration is into the vitreous or into the subretinal (interphotoreceptor) space.

33. The method of claim 30 wherein said administration is systemic delivery.

34. The method of claim 33 wherein said systemic delivery is by an oral route.

35. The method of claim 34 wherein said systemic delivery is by subcutaneous, intravenous or intramuscular injection.

36. A method of assessing the survival-promoting ability of an agent on retinal neurons or photoreceptors comprising

(i) injecting the agent intravitreally into an albino mammal eye, prior to, during, or after exposure of the mammal to continuous light,

(ii) evaluating the injected eye for degeneration of retinal neurons or photoreceptors as compared to a control eye exposed to the same light in the absence of injection of the agent;

wherein decreased retinal degeneration as compared to the control eye correlates positively with survival-promoting ability of the agent.

37. The method of claim 36 wherein said mammal is a rat.

38. The method of claim 36 wherein said control eye is in the same mammal as the intravitreally injected eye.